

REMARKS

This Response and Amendment is filed in response to the Office Action dated October 31, 2005.

Claims 1-34 are pending in this application. The Applicant gratefully acknowledges the Examiner's allowance of Claim 34 and the Examiner's indication that Claims 5, 8-14, and 25-33 contain allowable subject matter. By this Amendment, Claims 1-34 are unchanged, and Claim 37 is newly added. Claims 1-34 and 37 are presented for consideration by way of the present Response and Amendment.

On page 2 of the Office Action, Claims 1-4, 6-7, and 19-24 are rejected under 35 U.S.C. §102(b) as being anticipated by British Patent No. 761,937 issued to the Garrett Corporation ("Garrett"). On page 5 of the Office Action, Claims 15-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Garrett in view of U.S. Patent No. 6,168,734 issued to Botros ("Botros").

Independent Claim 1 recites (underlining added for emphasis):

A centrifugal blower, comprising a centrifugal fan comprising:
a hub adapted for rotation about a central axis;
a first plurality of blades arranged about the central axis, wherein each of the blades defines
a leading edge;
a trailing edge;
a first side edge extending between the leading edge and the trailing edge, the first side edge being swept from the leading edge in a direction axially away from the leading edge and radially outward toward the trailing edge;
a second side edge extending between the leading edge and the trailing edge, a portion of the second side edge integral with at least a portion of the hub, the second side

edge being swept from the leading edge in a direction axially away from the leading edge and radially outward toward the trailing edge;

an inlet radius defined as an outermost radius of the blade leading edge;

a shroud integral with at least a portion of one of the first and second side edges of the first plurality of blades;

an intermediate radius defined as an innermost radius of the shroud;

a curvature in a first plane, the first plane extending through the blade and tangent to a cylinder which extends through the blade and is centered along the central axis, the cylinder being of a radius greater than a hub radius and less than the inlet radius; and

no curvature in a second plane, the second plane extending through the blade and tangent to a cylinder which extends through the blade and is centered along the central axis, the cylinder being of a radius greater than the intermediate radius.

With respect to independent Claim 1, Garrett does not teach or suggest a centrifugal fan including a hub, a first plurality of blades each having a leading edge, a trailing edge, a first side edge extending between the leading edge and trailing edge, a second side edge extending between the leading edge and trailing edge, in which a portion of the second side edge is integral with at least a portion of the hub, and in which at least a portion of one of the first and second side edges is integral with a shroud. Rather, Garrett discloses an impeller member 11 including a plurality of impeller blades 17 (see FIGS. 1 and 2) mounted to a disk 16. A cylindrical ring 31, which is a separate and distinct component from the blades 17, is mounted to the periphery of the entry edges 18 of the blades 17.

On page 3 of the Office Action, the Examiner suggests that the "shroud ring 31 is capable of being integrally formed with the first side edge [of the blade 17]." A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently

described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP §2131. The Applicant respectfully submits that Garrett neither shows the ring 31 being integrally formed with the blades 17 in the drawings, nor describes the ring 31 as being integrally formed with the blades 17 in the specification. Particularly, with reference to FIG. 1 in Garrett, different cross-hatching markings are used to illustrate that the ring 31 is a separate and distinct component from other components of the impeller member 11, including the disk 16 and blades 17. Garrett fails to teach or suggest that the cylindrical ring 31 can be integrally formed with the disk 16 and blades 17.

Also, with respect to independent Claim 1, there is no suggestion or motivation in Garrett to modify the impeller member 11 to integrally form the cylindrical ring 31 with the disk 16 and blades 17. Indeed, Garrett does not contemplate the manufacture of the impeller member 11 at all. As discussed by the Applicant on page 8, lines 3-14 of the Application, manufacturing a one-piece fan or impeller, including a shroud connected to at least a portion of the side edges of the blades, substantially restricts the design of the fan or impeller. Particularly, with reference to the one-piece backward-curved fan 400 illustrated in FIG. 1d of the present Application, the hub 408 can extend only to a radius less than the inlet radius of the fan 400, which corresponds with the innermost radius of the shroud. Garrett discloses an impeller member 11 having a design in which the disk 11 extends radially outward of the cylindrical ring 31. As such, the process used to manufacture the one-piece backward-curved fan 400 illustrated in FIG. 1d of the present Application cannot be used to manufacture the one-piece, modified impeller member 11 suggested by the Examiner on pages 3 and 4 of the Office Action.

Accordingly, the Applicant respectfully requests withdrawal of the 35 U.S.C. §102(b) rejection of independent Claim 1.

Claims 2-33 are each ultimately dependent upon independent Claim 1, and are believed to be allowable based upon Claim 1 and upon other features and elements claimed in Claims 2-33 but not discussed herein.

Newly-added Claim 37 recites:

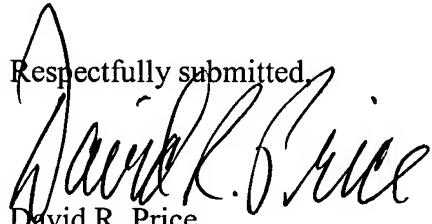
The centrifugal blower of Claim 1, wherein the portion of the hub integral with the second side edges of the first plurality of blades extends in a direction parallel to the central axis.

In addition to the subject matter claimed in independent Claim 1, Garrett does not teach or suggest that the portion of the hub integral with the side edges of the blades extends in a direction parallel to the central axis of the hub, as claimed in newly-added Claim 37. Rather, Garrett discloses that the blades 17 are mounted to the disk 16 along their entire lengths, such that no portion of the disk 16 connected to the blades 17 extends in a direction parallel to a central axis or an axis of rotation of the impeller member 11.

The Applicant respectfully submits that Claim 37 presents allowable subject matter in addition to that in independent Claim 1, and respectfully requests favorable consideration of Claim 37 by the Examiner.

CONCLUSION

In view of the amendments and remarks presented herein, it is respectfully submitted that the claims as amended are in condition for allowance. The Applicant kindly requests that the Examiner telephone the attorneys of record in the event a telephone discussion would be helpful in advancing the prosecution of the present application.

Respectfully submitted,

David R. Price
Reg. No. 31,557

Michael Best & Friedrich LLP
100 East Wisconsin Avenue
Suite 3300
414.271.6560